Introduction

The Arizona Game and Fish Department (AZGFD) held four Wildlife Summits to obtain input from their stakeholders into the development of the Comprehensive Wildlife Conservation Strategy (CWCS) as required for federal funding under the State Wildlife Grant Program. Stakeholder groups invited by AZGFD to participate in the Summits included Department constituency groups, special interests, local governments, Native American tribes, interagency cooperators, and the general public.

AZGFD contracted with Gunn Communications, Inc. (GCI) to facilitate the Summits using a real-time data collection system. During the Summits, GCI used CoNexus®, a general purpose tool for group polling, data gathering, and prioritization, to capture the opinions of the participants. Data was collected from the group using individual keypads and results were displayed instantly. After reviewing the results, Summit participants were asked to discuss their perceptions of the outcomes. At the conclusion of each Summit, the participants stated use of the CoNexus® system was effective in representing their opinions. Average effectiveness ratings ranged from 7.2 to 8.4 on a scale of 1 to 9 (9=practically perfect).

This report includes information generated by the CoNexus® software, lists created during individual and group brainstorming, and participant comments.

This information is meant to provide additional insight into the opinions and priorities of the Summit participants and should not be viewed as definitive. This information is most valuable when put into context and compared to the results of other public involvement activities. The statistical information provided in this report should be considered QUALITATIVE information and not statistically valid. The sample size was small and self-selected. The participants may not be reflective of the entire stakeholder community.

A total of 55 stakeholders participated in the Summits. Not every participant voted every section; therefore, the number of voters will vary. The first section of this report includes pie charts identifying which groups and organizations were represented and the personal hobbies and interests of the participants. Reviewing this demographic information will provide some insight into the opinions of the participants and the voting results.

The Summit agenda was divided into three parts. Part one began with a presentation on the CWCS and how the participants input will be used. The presentation was followed with a review and prioritization of AZGFD's 12 challenges using the CoNexus® dual-paired comparison software. Participants were also asked to rate on a scale of one to nine how well the Department was performing today in each of these 12 challenge areas.

Identifying stressors (threats) that may impact Arizona wildlife and habitat in the next 10 years was the focus of the second part of the Summits. Participants began by creating an individual list of stressors. The participants were divided into groups. Each group reviewed the individual lists and came to a consensus of the most important three to five stressors. The small groups posted their lists, and the group as a whole discussed, defined, and combined the stressors into one list which was voted using the CoNexus® dual-paired comparison software.

The purpose of part three was to identify and prioritize the criteria that should be used by AZGFD to identify the "Wildlife of Greatest Conservation Need." The same process that was used to create the list of stressors was used to create a list of criteria which was voted using the CoNexus® dual-paired comparison software.

This report combines the votes from each of the four Summits into one database for analysis. The results for each individual Summit are attached as separate reports. Comparisons are made in this combined report to show differences between the results of individual Summits.

The combined results have also been analyzed to determine if there were any significant differences in opinions of the various stakeholder groups. Demographic breakdowns of the individual Summit results are not included in the separate reports because they would not be statistically valid given the small number of participants at each Summit.

Participant comments are included in the individual Summit reports.

Summary of Key Findings

The stakeholders who participated in the Summits were very pleased that the Department was inviting them to participate early in the development of the CWCS and with a few exceptions stated the Department was performing well today.

Arizona Game and Fish's 12 Challenges

Wildlife habitat was identified as the most important challenge in each of the four Summits, but was usually rated as one of the lowest performing challenges. The importance ranking and performance rating for off-highway vehicle management varied significantly from Summit to Summit.

Summit participants put more value on protecting wildlife and habitats than recreational programs. It seems there may be a disconnect between what the stakeholders believed was important and where they perceived the Department was putting its resources. Some participants stated AZGFD needs to change its mission and put less emphasis on consumptive uses.

The **three most important challenges** identified by the Summit participants were:
1. Wildlife Habitat
2. Biological Information
3. Wildlife Management

The **three least important challenges** identified by Summit participants were:
1. Watercraft Management
2. Wildlife Recreation
3. Administrative Challenges

Nine of the 12 challenges were rated 50-80 on a scale of 100 by Summit participants. The five challenges AZGFD is currently **performing the best** were:
1. Wildlife Recreation
2. Information and Education
3. Law Enforcement
4. Administrative Challenges
5. Partnerships

Representatives of environmental organizations stated the Department was performing too well in providing wildlife recreation opportunities and viewed the top performance rating for wildlife recreation as a negative.

AZGFD performance was rated the **lowest** on these three challenges:
1. Off-Highway Vehicle Management
2. Watercraft Management
3. Wildlife Habitat

Stressors to Arizona Wildlife and Habitat

Each Summit created a unique list of stressors, but there were enough similarities to allow the following categorization:

- Invasive species
- Human causes – loss of habitat due to development, human manipulation, and increased demands on limited resources and for recreation
- Conflicts between humans and wildlife
- Overuse of natural resources and drought
- Ignorance or lack of respect for wildlife and natural resources by an uninformed public
- Lack of funding for wildlife and habitat management
- Fragmentation and loss of habitat and linkages
- Inconsistent management policies, priorities, and politics influencing science

Criteria for Identifying "Wildlife of Greatest Conservation Need"

Each Summit created a unique list of criteria, but there were enough similarities to allow the following categorization:

- Special status or vulnerable species
- Responsibility species - dependent on Arizona that it requires special attention regardless of other factors
- Community focal species - species that indicate or regulate the health of their wildlife communities and habitats
- Species of social or economic value
- Species for which data are lacking to determine their status
- Potential for successful recovery and management of wildlife and habitats
- Future threats to habitat and species (i.e., pollution, disease)
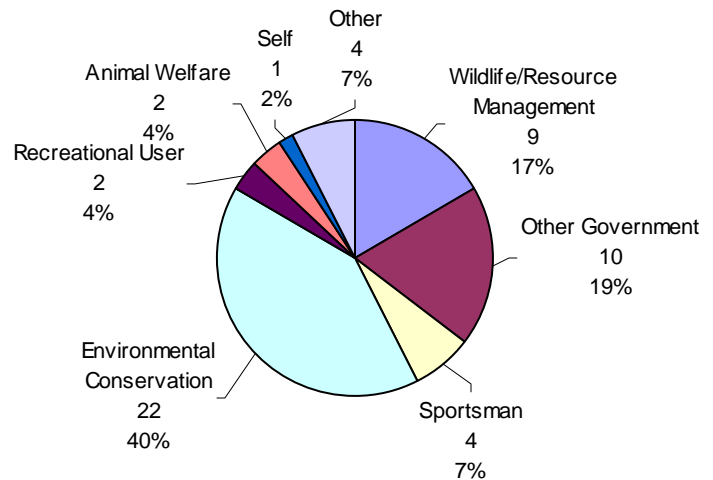
Demographics and Interests

The 54 participants who voted the demographic questions were asked to indicate which stakeholder group they were representing and to identify their personal interests.

As shown on Figure 1, representatives from environmental or conservation groups (22) accounted for forty percent of the participants. The next largest group of representation was from government agencies (19) including the wildlife and resource management agencies which accounted for thirty-six percent of the participants.
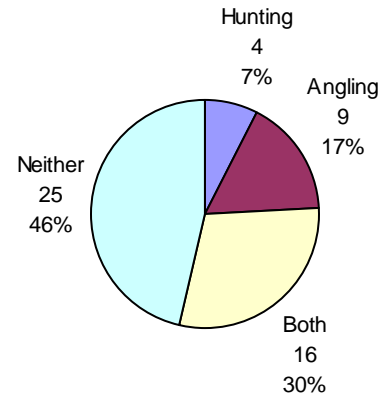
Although only seven percent (4) of the participants represent a sportsman's organization, fifty-four percent (29) either hunt and/or fish (Figure 2.)

Most of the participants (91%) watch wildlife and/or participate in animal welfare activities (Figure 3.)
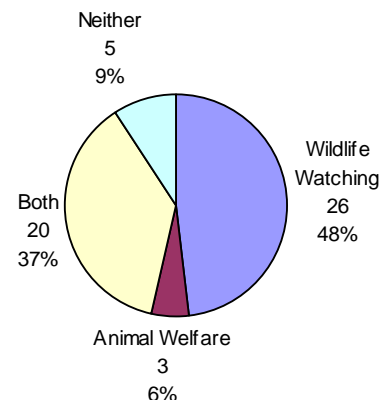
Figure 1: Participant Representation

Other
4
7%

Self
1
2%

Animal Welfare
2
4%

Recreational User
2
4%

Wildlife/Resource Management
9
17%

Other Government
10
19%

Environmental Conservation
22
40%

Sportsman
4
7%

Figure 2: Hunting and Fishing

Hunting
4
7%

Angling
9
17%

Neither
25
46%

Both
16
30%

Figure 3: Wildlife

Neither
5
9%

Wildlife Watching
26
48%

Both
20
37%

Animal Welfare
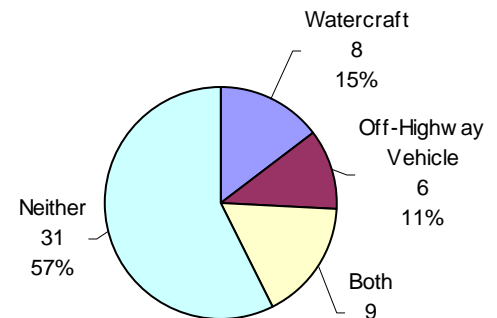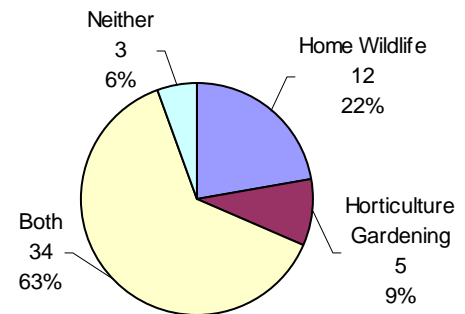3
6%

Less than half (23) of the participants use watercraft and/or off-highway vehicles (Figure 4.)

Almost all of the participants (94%) watch wildlife at home and/or participate in horticulture and gardening activities (Figure 5.)

Figure 4: Recreation

Watercraft
8
15%

Off-Highway Vehicle
6
11%

Both
9

Neither
31
57%

Figure 5: Home Activities

Neither
3
6%

Home Wildlife
12
22%

Horticulture Gardening
5
9%

Both
34
63%

Part 1:
Arizona Game and Fish's 12 Challenges

During recent strategic planning efforts, the Arizona Game and Fish Department (AZGFD) staff identified 12 challenge areas. Summit participants were asked to review the list and determine **"Which one of these challenges is the most important in achieving the AZGFD's mission."**

Agency Mission: To conserve, enhance, and restore Arizona's diverse wildlife resources and habitats through aggressive protection and management programs, and to provide wildlife resources and safe watercraft and off-highway vehicle recreation for the enjoyment, appreciation, and use by present and future generations.

The following is a description of each of the 12 challenges used during the Summit. The capital word in parentheses is the keyword used to identify the challenge on the CoNexus® graphs.

- **Planning and Funding** – Manage wildlife resources as a public trust through efficient and funded activities. (PLAN)

- **Biological Information** – Ensure that biological information used in decision making is accurate and used to implement multi-use land management. (BIO INFO)

- **Wildlife Management** - Make wildlife decisions that reflect sound science and values. (MANAGE)

- **Wildlife Habitat** - Work to ensure habitat is protected and properly managed for wildlife. (HABITAT)

- **Partnerships** – Develop partnerships that recognize wildlife as a public trust. (PARTNER)

- **Laws and Legal Considerations** – Ensure laws and policies are sufficient to protect wildlife and their habitats. (LEGAL)

- **Law Enforcement** - Enforce laws to protect wildlife, public health and safety and sustain recreation opportunities. (ENFORCE)

- **Wildlife Recreation** – Provide ample wildlife recreation opportunities for the full spectrum of wildlife recreation users. (RECREAT)

- **Information and Education** – Provide the public wildlife information and education. (EDUCATION)

- **Off-Highway Vehicle Management** – Manage off-highway vehicles impacts on wildlife and their habitats. (OHV)

- **Watercraft Management** - Manage watercraft impacts on wildlife and their habitats. (WATERCRAFT)

- **Administrative Challenges** – Maintain effective agency through sound fiscal management, business practices and well-trained workforce. (ADMIN)

A dual-paired comparison was used to determine which challenges were the most important to the Summit participants. Participants were also asked to rate on a scale of one to nine how well the AZGFD was performing in each of the challenge areas today.
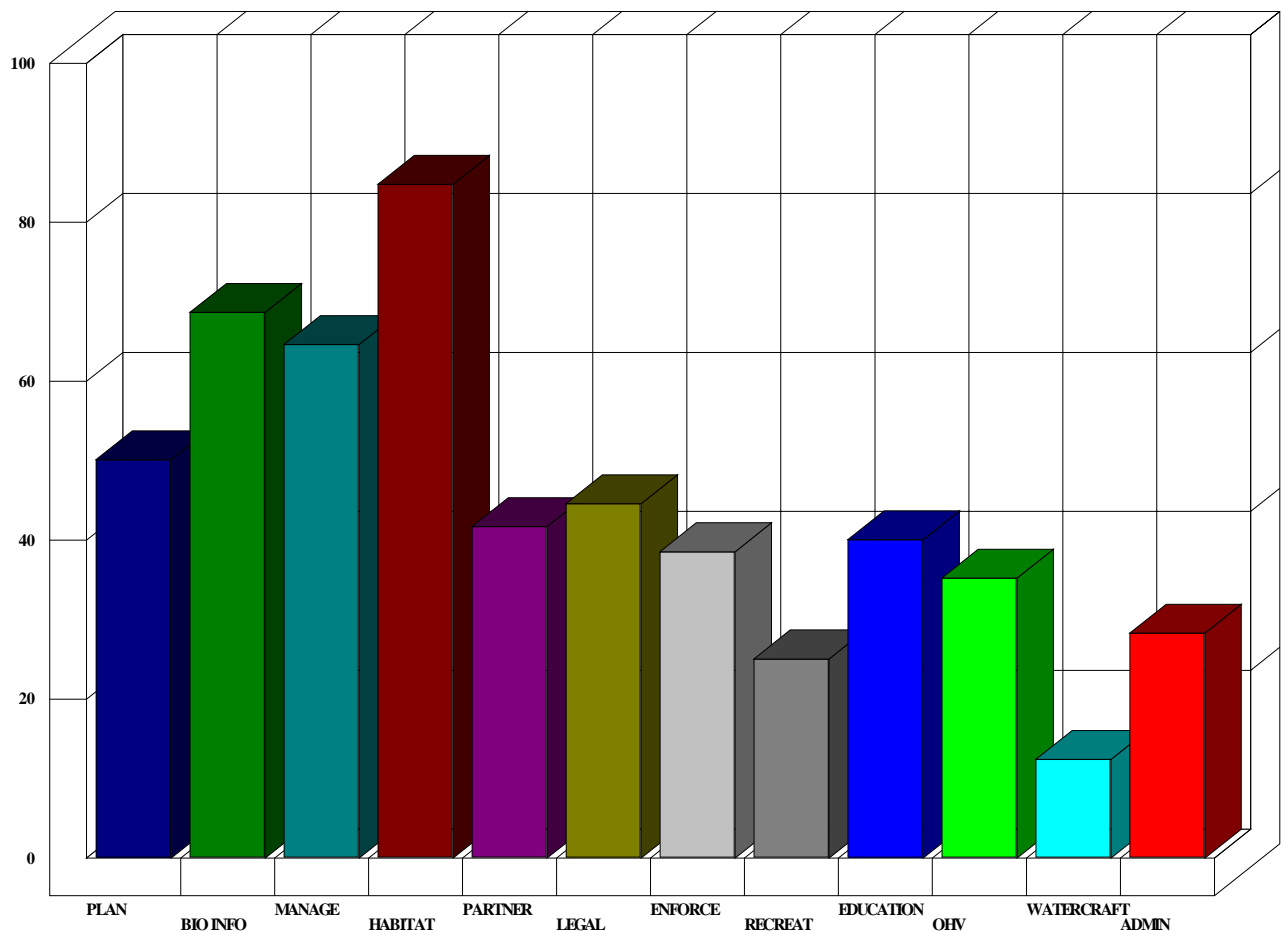
Importance

The participants ranked the importance of the 12 challenges as follows:

1. Wildlife Habitat
2. Biological Information
3. Wildlife Management
4. Planning and Funding
5. Laws and Legal Considerations
6. Partnerships
7. Information and Education
8. Law Enforcement
9. Off-Highway Vehicle Management
10. Administrative Challenges
11. Wildlife Recreation
12. Watercraft Management

Figure 6 shows the difference in how much more important each challenge was to the group. There were significant differences in the most important "Habitat" (value=84.8) and the least important "Watercraft" (value=12.4.)

**Figure 6: Importance Ranking of AZGFD's 12 Challenges**

Comparison of Importance Rankings by Interest Areas

Figure 7 compares the opinions of the participants who hunt and fish (29) and recreational vehicle users (23) to the combined group's importance rankings. These were the only two special interest areas where there was a difference of opinion. Participants who hunt and fish and recreational vehicle users groups ranked wildlife recreation higher in importance than the combined group.

Figure 7: Sportsmen and Recreation Vehicle Users
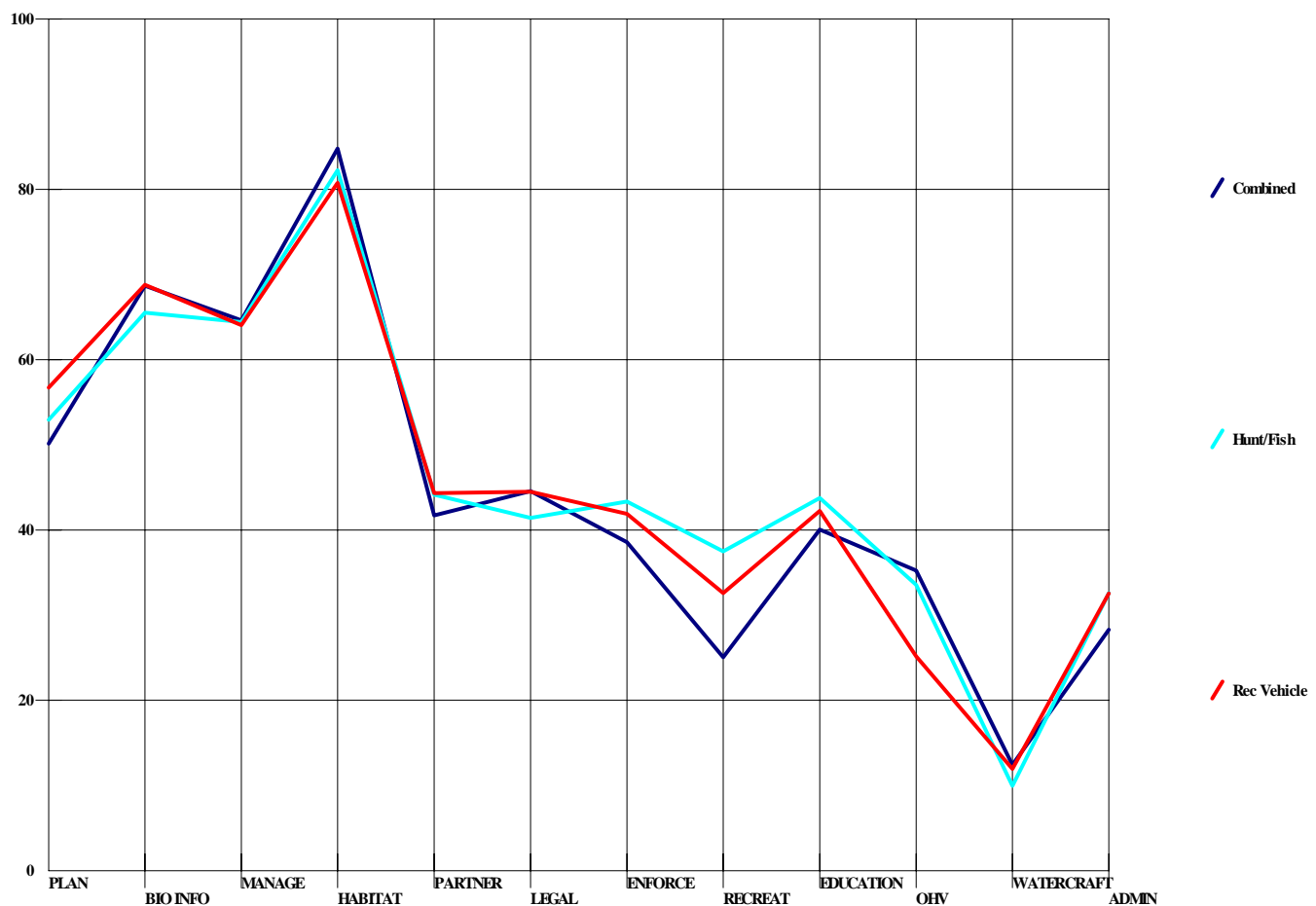
Comparison of Importance Rankings by Stakeholder Group

Figure 8 compares the importance rankings of the environmental and conservation (22) and government agency (19) representatives to the combined group. These two stakeholder groups had the most representation during the Summits. As seen on the graph below, the environmental and conservation group representatives ranked the following higher in importance than the combined group:

- Biological Information
- Wildlife Habitat
- Laws and Legal Considerations
- Off-Highway Vehicles

Representatives of environmentalist organizations gave a lower importance ranking to partnerships, wildlife recreation and information and education lower in importance than the combined group.

**Figure 8: Environmental Group and Government Agency Representatives**

Comparison of Individual Summit Importance Rankings

Figure 9 compares how each of the individual summits ranked the 12 challenges in importance to the combined group ranking. Key findings include the following:

- All four Summits ranked wildlife habitat as the most important challenge
- Flagstaff and Tucson participants gave a significantly higher value to biological information
- Flagstaff participants ranked biological information as number two in importance just below wildlife habitat
- Phoenix participants' importance ranking varied significantly from the other Summit's results. Phoenix rated partnerships, law enforcement, and off-highway vehicle management much more important. Laws and legal considerations were less important
- Tucson participants ranked laws and legal considerations slightly more important and wildlife recreation was ranked much lower in importance

Figure 9: Importance Ranking by Summit
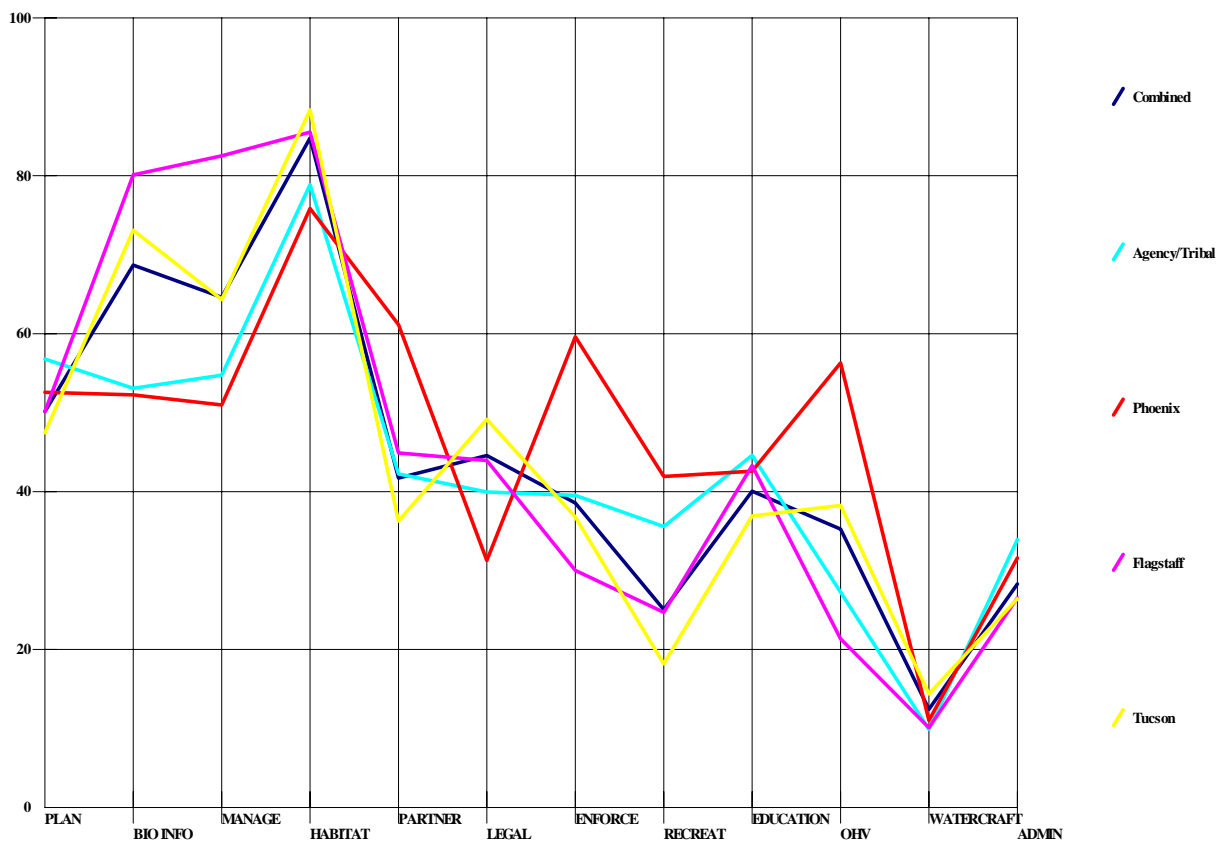
Performance

Participants also were asked to rate the current performance of the AZGFD in fulfilling each of the challenges today. A scale of 1-9 was used (9=practically perfect; 5=just getting by; 1=not at all.) Nine of the 12 challenges were had an average rating of 5 or higher. Figure 10 shows how the participants rated the performance on each of the 12 challenges. According to the participants, AZGFD is **performing the best on the following challenges:**

1. Wildlife Recreation
2. Information and Education

The **three lowest performing challenges** (average rating less than 5) were wildlife habitat, watercraft, and off-highway vehicles.

Figure 10: Current Performance by Challenge
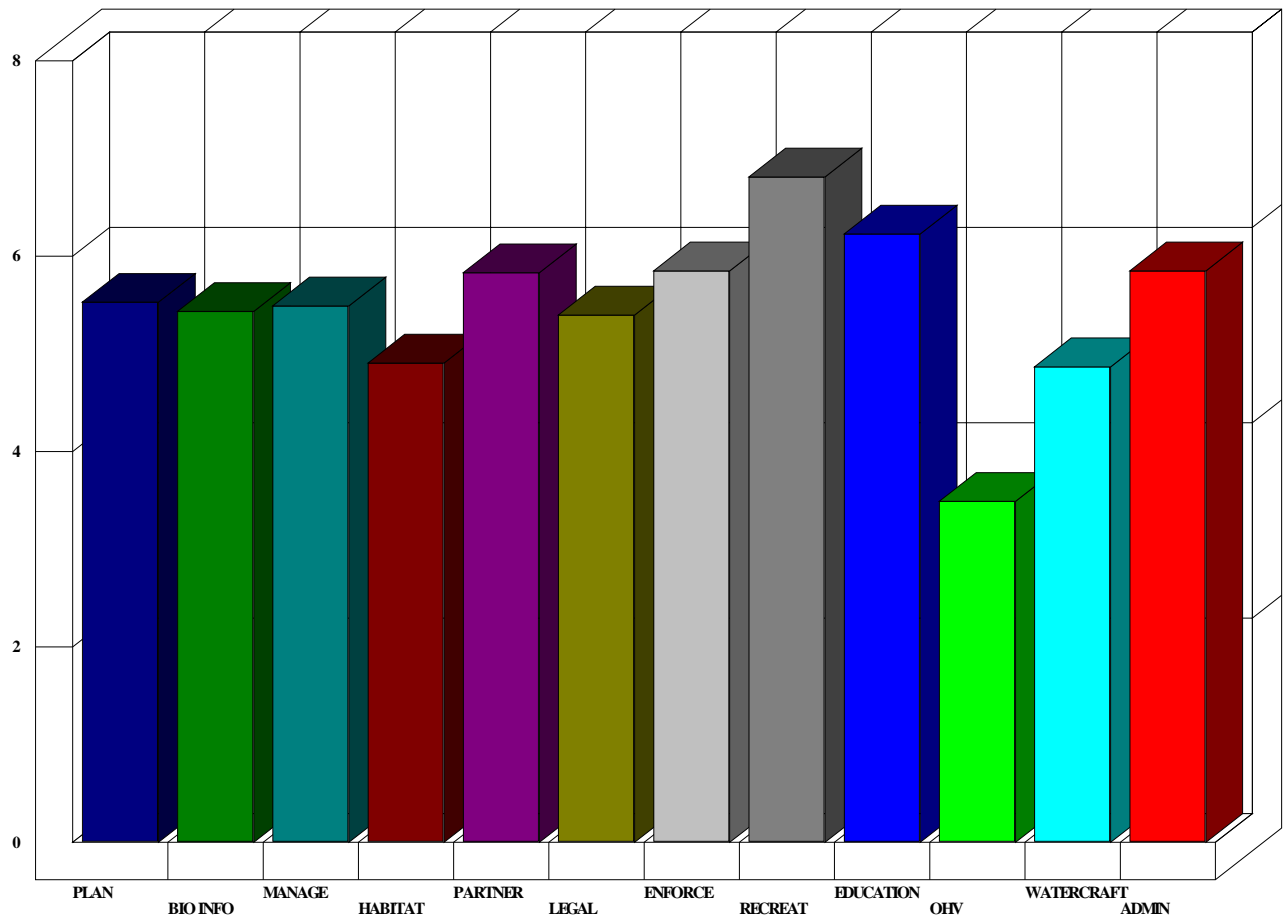
Comparison of Performance Ratings by Interest Areas

Figure 11 compares performance rankings of the participants who hunt and fish (29) and recreational vehicle users (23) to the combined group. These were the only two special interest areas where there was a difference of opinion. Both special interest groups rated each challenge area higher in performance than the combined group.

Figure 11: Hunters and Fishermen and Recreational Vehicle Users
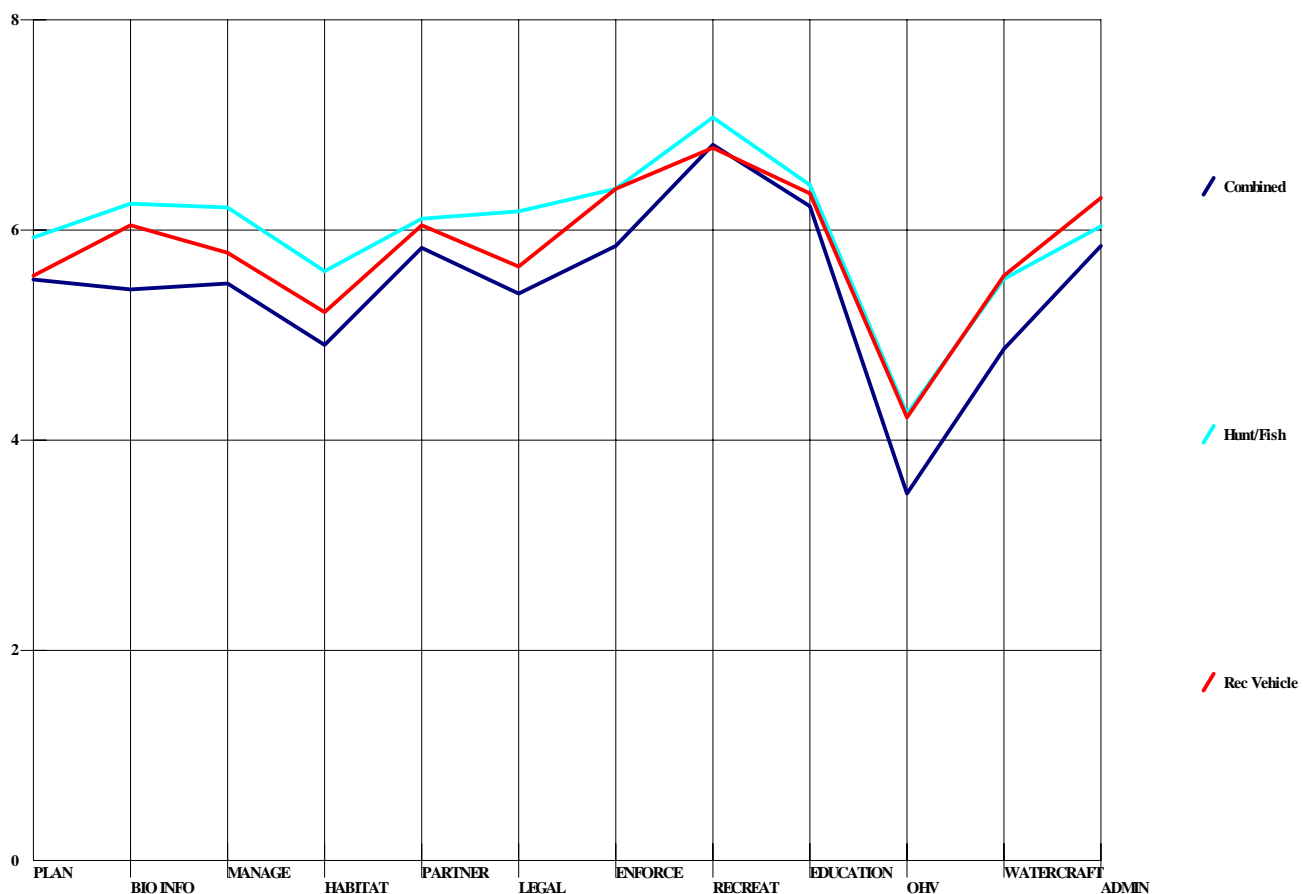
Comparison of Performance Ratings by Stakeholder Group

Figure 12 compares the performance rankings of environmental and conservation group (22) and government agency (19) representatives to the combined group. These two stakeholder groups had the most participation during the Summits. The government representatives gave the Department higher performance ratings for the challenges than the group as a whole.

With the exception of partnerships and wildlife recreation, environmentalists rated the Department as lower performing on the 12 challenges. Their performance rating for biological information and off-highway vehicles management were significantly lower than the performance ratings given by the government representatives.

**Figure 12: Environmental Group and Government Agency Representatives**

Comparison of Individual Summit Performance Ratings

Figure 13 compares the 12 challenges performance ratings of the individual Summits to the combined group rating. Key findings include the following:

- The Phoenix and Agency/Tribal Summit participants rated the challenges higher in performance
- The lowest performance ratings for wildlife habitat and wildlife recreation were given by Flagstaff participants
- Tucson participants rated the challenges lower in performance than any of the other Summits. The lowest ratings were given to the following challenges:
    - Off-Highway Vehicle Management
    - Law Enforcement
   - Laws and Legal Considerations
    - Biological Information

Figure 13: Performance Rating by Summit
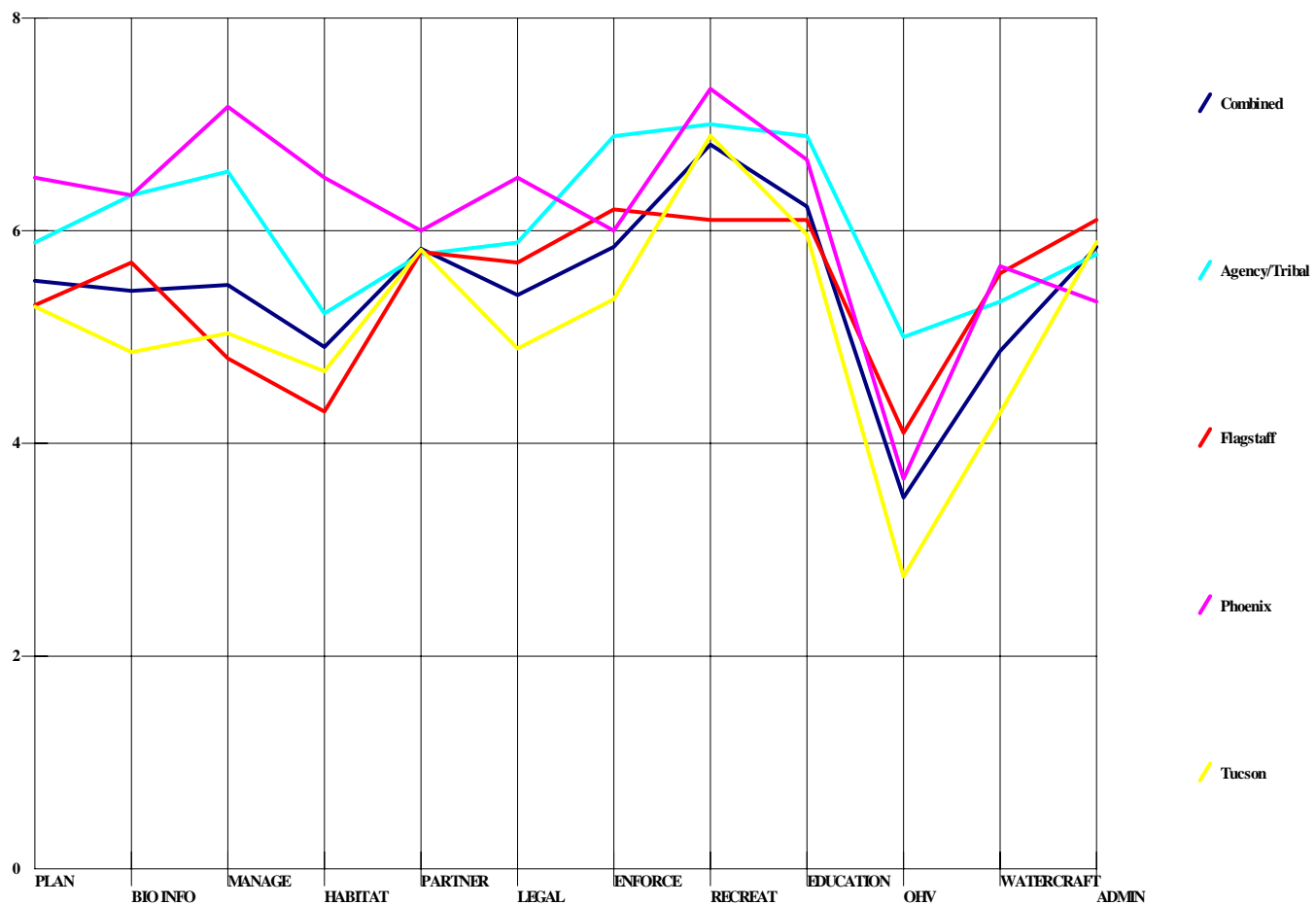
Profile Interpretation

The CoNexus® software creates a profile showing the relationship between the importance rankings and performance ratings. Figure 14 shows the importance from top to bottom; the higher the challenge on the profile the more important it was to the participants. Performance is measured from right to left; the further left the challenge is on the profile the better the Department is performing.

Figure 14: Comparison of Importance and Performance

Profile of Results
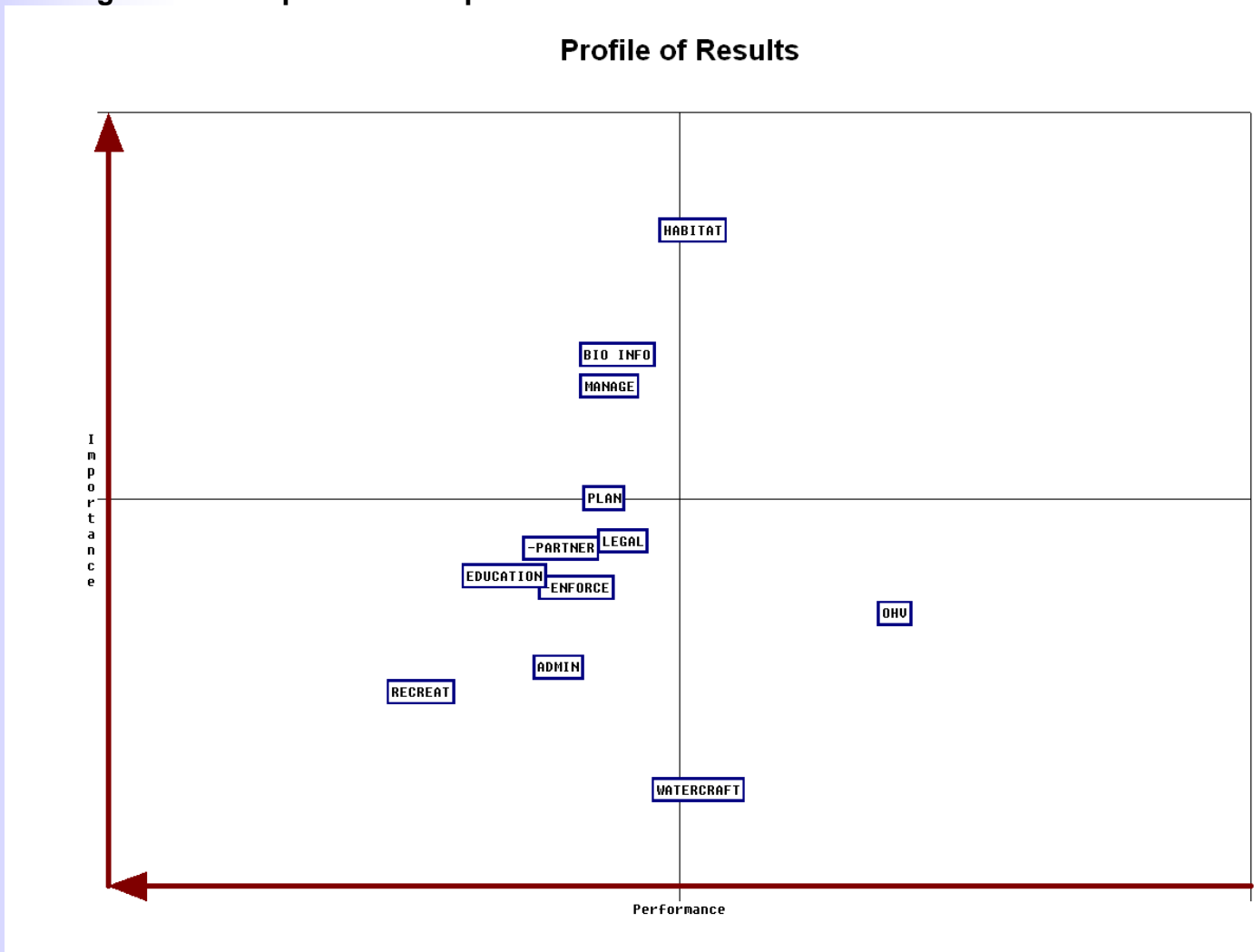
As seen on the profile, there are several challenges in the lower left quadrant. The participants rated the performance higher on these challenges at the same time they ranked them lower in importance. Also of note, the challenge that was the highest in performance was in the middle for performance.

The profile results seem to reinforce comments made during participant discussions. The following issues were identified through analysis of the profile results and participant comments. A listing of participant comments are included in the individual Summit reports.

- The wildlife habitat challenge needs further discussion and clarification. It was the most important challenge during each Summit but was rated third lowest in performance. Potential questions for future discussion, "What are the stakeholders' expectations for wildlife habitat management? What can AZGFD do to meet these expectations? Are the expectations within the AZGFD mission and/or authority?

- During Summit discussions, participants stated AZGFD is encouraging too much recreation, which is putting a strain on the state's natural resources. Although wildlife recreation was the top performing challenge, some stakeholders stated performing too well was a bad thing. This opinion is reflected in the ranking of wildlife recreation as the second lowest in importance.

- Watercraft management was recognized by the Summit participants as a needed program. Comments were received suggesting another law enforcement agency assume the responsibility for the watercraft program.

- The importance and performance votes for off-highway vehicles varied greatly between participants. The challenge was worded to focus on managing the impacts of off-highway vehicles but a few participants stated they assumed the challenge meant the direct management of the vehicle use. Everyone seems to agree off-highway vehicles are a problem but there is no agreement on what should be done and the role of AZGFD.

Missing Challenges

The Summit participants were asked if there were any challenges missing from the list. The following are issues that the participants felt needed to be addressed by the Department:
- Coordination between AZGFD program areas and between wildlife management agencies
- Funding priorities
- Private land hunting access and impacts
- Game vs. non-game priorities and funding
- Politics influencing sound science
- Definition of pristine condition

Funding

Each participant was given ten gold coins representing $100. At the back of the room were 12 folders – one for each challenge. The participants were asked to spend their money as they felt appropriate. They were instructed to spend all of their money and not to break any of the coins.

Figure 15 indicates that the participants spent 24% of their money on the most important challenge – wildlife habitat. The next highest funded challenge was biological information (14%) which was second in importance. The spending priorities were very similar to the importance ranking with the following exceptions:

- Planning and funding was voted as the fourth most important challenge (as shown on Figure 6) but only received the seventh highest amount of money
- Information and education ranked seventh in importance (as shown on Figure 6) and received the fourth highest amount of money
- Laws and legal considerations ranked fifth in importance but was tenth in spending receiving only 3% of the funds

Participants commented it was difficult to put money into the administration, planning and enforcement categories when they perceived a more urgent need for additional resources to support habitat and wildlife management. Most realized there was not enough money to fund all of the challenges.

Figure 15: Money Spent by Challenge
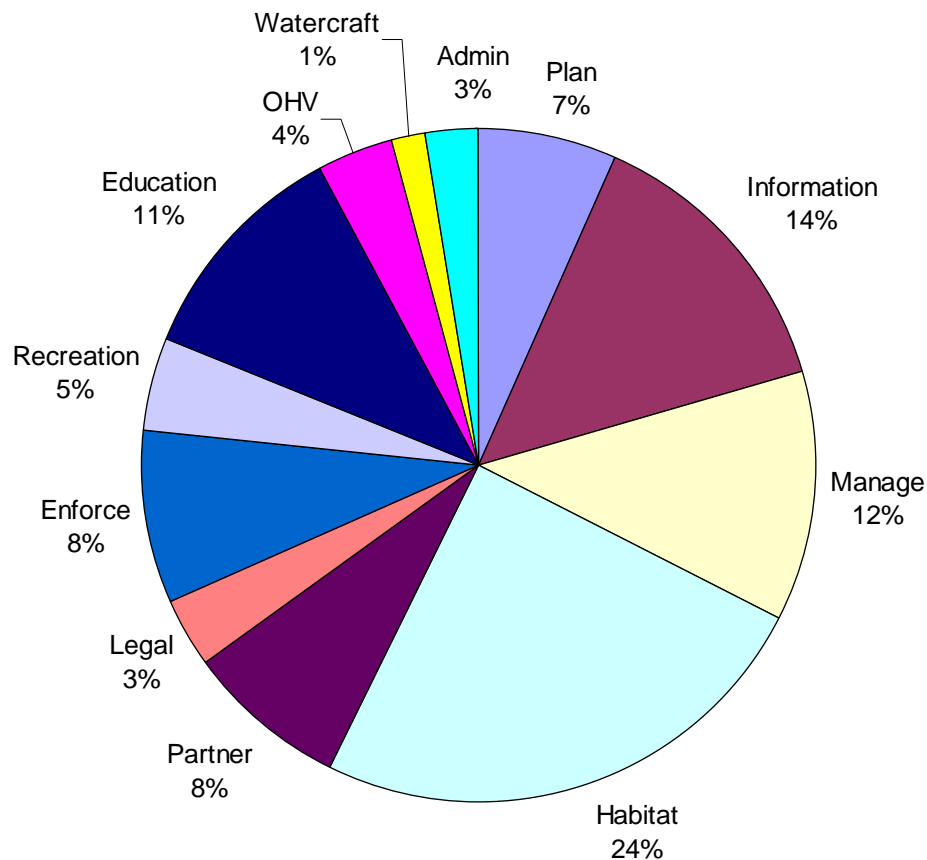
Part 2:
Stressors to Arizona's
Natural Habitats and Wildlife

Each participant was asked to identify three stressors (threats) to Arizona's natural habitats and wildlife they believed were the most important to be addressed in the next ten years. The participants were then divided into groups and asked to review their individual list of stressors and come to a consensus on five top stressors. The participants defined, discussed, and combined the small group list of stressors into one list which was voted using the CoNexus® dual-paired comparison software.

Because **each Summit prepared their own list of stressors**, it is not possible to combine the results. Listed below are the stressors lists in order of importance identified at each summit. Participant comments are included in the individual Summit reports.

Agency/Tribal Summit Stressors:
1. Human development - built environment
2. Water quantity and quality – over pumping, diversions, degradation from pollution
3. Overuse of natural resources
4. Invasive species
5. Lack of respect for wildlife and resources
6. Ignorance of wildlife and resources
7. Human wildlife conflicts - interface between humans and wildlife
8. Recreational demand

Phoenix Summit Stressors:
1. Human causes - loss of habitat due to development and growing population
2. Lack of public priority for wildlife
3. Conflicts - land use and wildlife conflicts
4. Lack of wildlife funding
5. Contamination and invasion of species and habitat - pollution
6. Natural causes - loss of habitat due to drought

Flagstaff Summit Stressors:
1. Fragmentation and loss of habitat and linkages
2. Increased human demands on limited natural resources
3. Negative impacts from human manipulation - fire suppression, non-native species

4. Politics superseding sound science and implementation
5. Inconsistency management policies and goals between land stewards
6. Lack of funding

Tucson Summit Stressors:

1. Habitat loss/fragmentation - associated with growth and development
2. Habitat degradation due to resource use
3. Exotic invasive species
4. Land use priorities don't match wildlife needs
5. Inadequate funding for monitoring and management
6. Lack of an informed and supportive public
7. Lack of inter(intra)-agency coordination and inconsistent laws and policies
8. Illegal and depreciative behavior

After the vote, some of the Tucson participants believed that water loss and degradation should have been included in the list of stressors that were voted by the group. To address their concerns, the group voted a quick poll on the importance of water loss and degradation as a stressor. The group rated water loss and degradation was very important (average 8.5 on a scale of 1 to 9.)

Stressors Summary

To help identify similarities and provide a summary, the stressor list from each Summit was combined into the following groups:

Invasive species
- Invasive species
- Contamination and invasion of species and habitat (pollution)
- Exotic invasive species

Human Causes – loss of habitat due to development, human manipulation, increased demands on limited resources and for recreation
- Human development - built environment
- Human causes - loss of habitat due to development and growing population
- Negative impacts from human manipulation fire suppression, non-native species
- Increased human demands on limited natural resources
- Recreational demand

Conflicts between humans and wildlife
- Human wildlife Conflicts - interface between humans and wildlife
- Conflicts - land use and wildlife conflicts

Overuse of Natural Resources and Drought
- Overuse of natural resources
- Water quantity and quality - over pumping - diversions - degradation from pollution
- Natural causes - loss of habitat due to drought

Ignorance, lack of respect for wildlife and natural resources by an uninformed public
- Lack of respect for wildlife and resources
- Ignorance for wildlife and resources
- Illegal and depreciative behavior
- Lack of an informed and supportive public

Lack of funding for wildlife and habitat management
- Lack of wildlife funding
- Lack of public priority for wildlife
- Lack of funding
- Inadequate funding for monitoring and management

Fragmentation and loss of habitat and linkages
- Fragmentation and loss of habitat and linkages
- Habitat loss/fragmentation associated with growth and development
- Habitat degradation due to resource use

Inconsistent management policies, priorities and politics influencing science
- Inconsistency management policies and goals between land stewards
- Politics superseding sound science and implementation
- Land use priorities don't match wildlife needs
- Lack of inter(intra)-agency coordination and inconsistent laws and policies

Part 3:
Criteria for Identifying
"Wildlife of Greatest Conservation Need"

Each participant was asked to identify three criteria to be used by AZGFD to select the "Wildlife of Greatest Conservation Need." The participants were then divided into groups and asked to review their individual list of criteria and come to a consensus on five top criteria. The participants defined, discussed, and combined the small group list of criteria into one list, which was voted using the CoNexus® dual-paired comparison software.

Because **each Summit prepared their own list of criteria**, it is not possible to combine the results. Listed below are the criteria lists in order of importance from each summit. Participant comments are included in the individual Summit reports.

Agency/Tribal Summit Criteria:
1. Special status - federally listed - state species of concern - BLM/FS sensitive
2. Threats - future threats to habitat and species i.e. pollution - disease
3. Habitat status
4. Habitat trends
5. Responsibility - species so dependent on AZ that it requires special attention regardless of other factors
6. Population trend - increasing or decreasing over time
7. Population size - number of individuals in the population
8. Population distribution - where they are

Phoenix Summit Criteria:
1. Impact on the ecosystem
2. Functional species - providing vital functions within ecosystems
3. Economic value - providing significant economic value
4. Indicator species - bio community health
5. Economic impacts
6. Potential for success
7. Legal constraints and opportunities
8. Heritage species

Flagstaff Summit Criteria:
1. Species for which further conservation efforts support ecosystem goals
2. Ensure native species diversity

3. Consider population trends and sizes proactively
4. Keystone species
5. Native and unique species
6. Endangered species
7. Indicator species
8. Species with large area requirements
9. Umbrella species

Tucson Summit Criteria:
1. Declining suitable habitat
2. Threatened, endangered, sensitive
3. Demographic vulnerability
4. Geographic limited distribution- includes endemic
5. Umbrella - keystone species
6. Sensitivity to disturbance
7. Species lacking data

Criteria Summary

To help identify similarities and provide a summary, the criteria list from each Summit was combined into the following groups:

Special Status or Vulnerable Species
- Population size - number of individuals in the population
- Population trend - increasing or decreasing over time
- Habitat trends- increasing or decreasing over time
- Habitat status – suitability of habitat for wildlife
- Population distribution - where they are
- Legal constraints and opportunities
- Demographic vulnerability – species that are highly sensitive to disturbance
- Special status - federally listed - state species of concern - BLM/FS sensitive
- Threatened, endangered, sensitive

Responsibility Species – so dependent on Arizona that it requires special attention regardless of other factors
- Native and unique species
- Geographic limited distribution - includes endemics (only found in specific areas and no where else)
- Ensure native species diversity

Community Focal Species (i.e. species that indicate or regulate the health of their wildlife communities and habitats)

- Indicator species - biological community health
- Species for which further conservation efforts support ecosystem goals
- Umbrella species
- Keystone species
- Functional species - providing vital functions within ecosystems
- Species with large area requirements

Species of Social or Economic Value

- Economic value - providing significant economic value
- Economic impacts
- Heritage species – recognized as state or national symbols

Species for which data are lacking to determine their status

Potential for successful recovery and management of wildlife and habitats

Future threats to habitat and species (i.e. pollution – disease)